CLAIMS

1. A multiaxial universal testing machine capable to evaluate some behaviour parameters, like tensile, compression or fatigue, in different directions simultaneously of materials with planar structures having a central block 7, working as a supporting structure, where the platforms 2 are rigidly attached in a radial orientation, in which the arms are seated, designed to apply a required force and displacement to each gripping jaw, where the test specimen is attached.

2. A multiaxial universal testing machine according to claim 1 each arm is made up of an electric motor with speed reducer, coupled to a screw type linear drive, in series with a load cell and a gripping jaw.

3. A multiaxial universal testing machine according to claim 2 the rotational movement of the geared motor is converted into linear displacement and force by the screw type linear drive, monitoring and controlling this parameters with a rotary encoder in the motor (to the displacement) and a load cell, between the screw type linear drive and the gripping jaw (to the force), respectively.

4. A multiaxial universal testing machine according to claim 3, each gripping jaw seats on a slide

carriage that can travel along a linear dry bearing, responsible for the correct alignment of the test specimen displacement.

5. A multiaxial universal testing machine according to claim 1, the multiaxial universal testing machine can be composed by 1, 2, 4, 6, 8, 10, 12, 14, 16, 18 or 20 axis, keeping all the capabilities needed to evaluate the mechanical behaviour and performance of materials with planar structures.

6. A multiaxial universal testing machine according to claim 5 and the kind of assay, the test specimen shape must be associated to the number of activated axis.

7. A method for applying a multiaxial load to a test specimen comprising the steps of:

Enclosing the test specimen inside the central area circumscripted by all the gripping jaws and reserved to the placement of the test specimen;

Attaching the test specimen to the gripping jaws involved in the assay to perform, according to the desired orientation;

Applying force to the test specimen through the displacement of the gripping jaws and following the configuration parameters defined to the test performance, including the kind of assay and the active axis.